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Chemical Oxidation - Enhancing Organic Contaminant Remediation via the use of co-solvent surfactants

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In-situ and Ex-situ Chemical Oxidation Technologies is more and more used for Soil and Groundwater Remediation. However, the rate of desorption from the soil and contaminant availability are often limiting the success of this Remediation Technique.

The use of co-solvent surfactant introduce with the oxidant allows for faster desorption rate and better contact between the oxidant and contaminant thus enhancing the result obtained with this technology.

This presentation reviews how the commonly used oxidants (hydrogen peroxide, sodium and potassium permanganate, sodium persulphate and sodium percarbonate) interact and with co-solvents surfactants and the contaminant.

Data from the lab and from the field are presented at the end of the technology section. This allows the attendee to better understand where and how these remediation technologies can be applied with success.

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Mr. Paré P. Eng., has a degree in Chemical Engineering from Laval University. He has been involved for the last 12 year in the evaluation, development, design and promotion of both conventional and innovative environmental technologies within the Industrial sectors, the Engineering Firms, the Specialized Environmental Consultants and the various levels of Governments. As Vice-President with Chemco Inc., Mr. Paré responsibilities includes the development of remediation strategies, the assistance in drafting certificates of authorization, the technico-economical analysis, the design and the supply of storage equipment, pumps and the logistics of supply for the projects. Last year, Mr. Paré has worked with over 100 sites applying it's expertise to various type of contaminants ranging from chlorinated compound, pesticides and petroleum hydrocarbons. He is also involved with many Environmental organisations like the Canadian Brownfield Network, ESAA, OCETA and Réseau-Environnement where he is an active technical committee member and occasional speaker.